



# Microgram

## *Bulletin*

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- MARCH 2011 -

- SCHEDULING UPDATE -

[Editor's Preface: The following notice has been edited for *Microgram Bulletin*. See the Federal Register: March 1, 2011, (Volume 76, Number 40) (Rules and Regulations) (Pages 11075-11078) for the complete text of the final order.]

**DEPARTMENT OF JUSTICE**

**Drug Enforcement Administration**

**21 CFR Part 1308**

**[Docket No. DEA-345F]**

**Schedules of Controlled Substances: Temporary Placement of Five Synthetic Cannabinoids Into Schedule I**

**AGENCY:** Drug Enforcement Administration (DEA), U.S. Department of Justice.

**ACTION:** Final order.

**SUMMARY:** The Administrator of the Drug Enforcement Administration (DEA) is issuing this final order to temporarily place five synthetic cannabinoids into the Controlled Substances Act (CSA) pursuant to the temporary scheduling provisions. The substances are 1-pentyl-3-(1-naphthoyl)indole (JWH-018), 1-butyl-3-(1-naphthoyl)indole (JWH-073), 1-[2-(4-morpholinyl)ethyl]-3-(1-naphthoyl)indole (JWH-200), 5-(1,1-dimethylheptyl)-2-[(1R,3S)-3-hydroxycyclohexyl]-phenol (CP-47,497), and 5-(1,1-dimethyloctyl)-2-[(1R,3S)-3-hydroxycyclohexyl]-phenol (cannabicyclohexanol; CP-47,497 C8 homologue). This action is based on a finding by the Administrator that the placement of these synthetic cannabinoids into Schedule I of the CSA is necessary

to avoid an imminent hazard to the public safety. As a result of this order, the full effect of the CSA and its implementing regulations including criminal, civil and administrative penalties, sanctions and regulatory controls of Schedule I substances will be imposed on the manufacture, distribution, possession, importation, and exportation of these synthetic cannabinoids.

**FOR FURTHER INFORMATION CONTACT:** Christine A. Sannerud, PhD, Chief, Drug and Chemical Evaluation Section, Office of Diversion Control, Drug Enforcement Administration, 8701 Morrisette Drive, Springfield, VA 22152, telephone (202) 307-7183, fax (202) 353-1263, or e-mail [ode@usdoj.gov](mailto:ode@usdoj.gov).

**DATES:** Effective Date: March 1, 2011.

**SUPPLEMENTARY INFORMATION:**

**Background**

The Comprehensive Crime Control Act of 1984 (Pub. L. 98-473), which was signed into law on October 12, 1984, amended section 201 of the CSA (**21 U.S.C. 811**) to give the Attorney General the authority to temporarily place a substance into Schedule I of the CSA for one year without regard to the requirements of 21 U.S.C. 811(b) if he finds that such action is necessary to avoid imminent hazard to the public safety. The Attorney General may extend the temporary scheduling up to six months during pendency of proceedings under 21 U.S.C. 811(a)(1). A substance may be temporarily scheduled under the emergency provisions of the CSA if it is not listed in any other schedule under section 202 of the CSA (**21 U.S.C. 812**) or if there is no exemption or approval in effect under 21 U.S.C. 355 for the substance. The Attorney General has delegated his authority under 21 U.S.C. 811 to the DEA Administrator (28 CFR 0.100).

As per section 201(h)(4) of the CSA (**21 U.S.C. 811(h)(4)**), the Deputy Administrator, now Administrator, transmitted notice of her intention to temporarily place JWH-018, JWH-073, JWH-200, CP-47,497, and cannabicyclohexanol into Schedule I of the CSA to the Assistant Secretary for Health of the Department of Health and Human Services (HHS) in a letter dated October 6, 2010. In response to this notification, the Assistant Secretary of Health, HHS communicated in a letter dated November 22, 2010, to the then-DEA Acting Administrator that there are no exemptions or approvals in effect for JWH-018, JWH-073, JWH-200, CP-47,497, and cannabicyclohexanol under Section 505 of the Federal Food, Drug and Cosmetic Act (21 U.S.C. 355). The substances are not listed in any other schedule in **21 U.S.C. 812**.

A notice of intent to temporarily place JWH-018, JWH-073, JWH-200, CP-47,497, and cannabicyclohexanol into Schedule I of the CSA was published in the Federal Register on November 24, 2010 (75 FR 71635). Before making a finding that temporarily placing a substance into Schedule I of the CSA is necessary to avoid an imminent hazard to the public safety, the Administrator must consider three of the eight factors (factors 4, 5, and 6) set forth in section 201(c) of the CSA (**21 U.S.C. 811(c)**). These factors are the history and current pattern of abuse, the scope, duration, and significance of abuse, and what, if any, risk there is to the public health, including actual abuse, diversion from legitimate channels, and clandestine importation, manufacture, or distribution. 21 U.S.C. 811(h)(3).

The temporary placement of these five synthetic cannabinoids into Schedule I of the CSA is necessary in order to avoid an imminent hazard to the public safety. First, these substances are not intended for human consumption, but there has been a rapid and significant increase in abuse of these substances in the United States. As a result of this abuse, synthetic cannabinoids are banned in at least 18 states in the United States and several countries, and all five branches of the U.S. military prohibit military personnel from possessing or using synthetic cannabinoids. Second, law enforcement has seized synthetic cannabinoids in conjunction with controlled substances and based on self-reports to law enforcement and health care professionals, synthetic cannabinoids are abused for their psychoactive properties. Third, numerous state and local public health departments and poison control centers have issued health warnings describing the adverse health effects associated with synthetic cannabinoids. Based on scientific data currently available, these five substances have the potential to be extremely harmful and, therefore, pose an imminent hazard to the public safety.

### **History and Current Pattern of Abuse**

A "cannabinoid" is a class of chemical compounds in the marijuana plant that are structurally related. The cannabinoid [Delta]9- tetrahydrocannabinol (THC) is the primary psychoactive constituent of marijuana. "Synthetic cannabinoids" are a large family of chemically unrelated structures functionally (biologically) similar to THC, the active principle of marijuana.

Two of the five synthetic cannabinoids (CP-47,497 and cannabicyclohexanol) were synthesized in the early 1980s for research purposes in the investigation of the cannabinoid system. JWH-018, JWH-073, and JWH-200 were prepared in the mid-1990s and evaluated to further advance understanding of drug-receptor interactions regarding the cannabinoid system. Developed and evaluated as research tools, no other known legitimate uses have been identified for these five synthetic cannabinoids. Furthermore, these five synthetic cannabinoids are not intended for human consumption.

The emergence of these five synthetic cannabinoids represents a recent phenomenon in the U.S. designer drug market. Since the initial identification of JWH-018 by U.S. forensic laboratories, many additional synthetic cannabinoids including JWH-073, JWH-200, CP- 47,497, and cannabicyclohexanol have been identified in related herbal incense products and plant food. These synthetic cannabinoids have purported psychotropic effects when smoked or ingested. These substances are typically found in powder form or are dissolved in appropriate solvents, such as acetone, before being sprayed on the plant material contained in the herbal incense products.

The popularity of these THC-like synthetic cannabinoids has significantly increased throughout the United States, and they are being abused for their psychoactive properties as reported by law enforcement, the medical community, and through scientific literature.

Some of the product names include, but are not limited to, "Spice," "K2," and many more. Due to sophisticated marketing, the products that contain these five THC-like synthetic cannabinoids are perceived as "legal" alternatives to marijuana despite the fact that they are typically advertised as herbal incense or plant food (Bonsai - 18) by Internet retailers, tobacco shops, head shops, and other domestic brick and mortar retail venues, and labeled "Not For Human Consumption." No evidence exists that these synthetic cannabinoids have value as an additive to herbal incense products due to the absence of odor associated with the substances.

Based on law enforcement encounters, these five substances are typically found laced on plant material. The plant material is packaged in small pouches or packets, and is being sold over the Internet, in tobacco and smoke shops, drug paraphernalia shops, gas stations, and convenience stores as herbal incense products, giving customers of all ages direct access to these five substances. Research articles propose that the packaging is professional and conspicuous, targeting young people, possibly eager to use cannabis, but who are afraid of the judicial consequences and/or association with illicit drugs.

According to Internet discussion boards and law enforcement encounters reported directly to DEA, these five synthetic cannabinoids are being both abused alone and/or being sprayed on plant material (which is then smoked). The most common route of administration of these synthetic cannabinoids is by smoking (using a pipe, a water pipe, or rolling the drug-spiked plant material in cigarette papers).

These five synthetic cannabinoids alone or spiked on plant material have the potential to be extremely harmful due to their method of manufacture and high pharmacological potency. There is little information regarding the pharmacology, toxicology, and safety of these substances in humans given the minimal amount of pre-clinical investigations undertaken regarding these substances; therefore, the full danger of these drugs has not yet been determined.

As of January 31, 2011, 18 states in the United States and other countries have controlled one or more of the five synthetic cannabinoids. Moreover, all five branches of the military prohibit their personnel from possessing or using synthetic cannabinoids associated with products such as Spice and K2.

### **Scope, Duration, and Significance of Abuse**

According to forensic laboratory reports, the initial appearance of these synthetic cannabinoids in herbal incense products in the United States occurred in November 2008 when U.S. Customs and Border Protection first encountered products such as Spice.

The increasing abuse of the five synthetic cannabinoids is demonstrated by the increase in federal, state, and local law enforcement activity associated with these substances. The National Forensic Laboratory Information System, a national repository for drug evidence analyses from forensic laboratories across the United States, has reported in excess of 500 exhibits containing synthetic cannabinoid from January 2010 through September 2010. These exhibits came from numerous states across the nation including Alabama, Arkansas, California, Florida, Hawaii, Iowa, Indiana, Kansas, Kentucky, Louisiana, Minnesota, Missouri, North Dakota, Nebraska, Nevada, Oklahoma, Pennsylvania, South Carolina, Tennessee, and Virginia.

Even though there is no evidence of legitimate non-research related use for these synthetic cannabinoids, multiple shipments of JWH-018 and JWH-073 have been encountered by U.S. Customs and Border Protection in 2010. One enforcement operation encountered five shipments of JWH-018 totaling over 50 kilograms (110.2 pounds) of powder. In addition, bulk loads of JWH-018 and JWH-200 have been encountered by law enforcement in 2010. For example, in Casper, Wyoming, DEA agents encountered large quantities of herbal incense products laced with the synthetic cannabinoid JWH-018 in conjunction with methamphetamine and other illegal drugs in execution of search and arrest warrants.

On March 24, 2010, the American Association of Poison Control Centers reported receiving 112 calls from 15 states related to synthetic cannabinoids to U.S. poison centers since 2009. Just nine months later, the number of calls increased to over 2,700 from 49 states and the District of Columbia.

#### **What, If Any, Risk There Is to the Public Health**

Health warnings have been issued by numerous state and local public health departments and poison control centers describing the adverse health effects associated with these synthetic cannabinoids and their related products, including agitation, anxiety, nausea, vomiting, tachycardia (fast, racing heartbeat), elevated blood pressure, tremor, seizures, hallucinations, paranoid behavior, and non-responsiveness.

Smoking these synthetic cannabinoids for the purpose of achieving intoxication and experiencing the psychoactive effects has been identified as a reason for emergency room visits and calls to poison control centers. In a fact sheet by the National Drug Court Institute, the problem of synthetic cannabinoid abuse is described as "significant and disturbing." This is supported by information that was communicated to DEA from one of the major private toxicology laboratories. Based on laboratory findings from drug screens for the period of July 2010 through November 2010, over 3,700 specimens tested positive for either JWH-018 or JWH-073. They also indicated that they were finding 30-35% positivity for specimens submitted by juvenile probation departments.

Case reports describe psychotic episodes, withdrawal, and dependence associated with use of these synthetic cannabinoids, similar to syndromes observed in marijuana abuse. In addition, based on law enforcement encounters reported directly to DEA, when responding to incidents involving individuals who have reportedly smoked these synthetic cannabinoids, first responders report that these individuals have suffered from intense hallucinations. Moreover, emergency department physicians and toxicologists have reported the adverse health effects associated with smoking herbal incense products laced with these substances. Furthermore, based on law enforcement encounters, suspected Driving Under the Influence of Drug incidents are attributed to the smoking of synthetic cannabinoids. For example, in September 2010, police in Nebraska responded to an incident involving a teenage male who had careened his truck into the side of a residence. After striking the residence and several more items, the teen continued several more yards before coming to a complete stop. Prior to crashing the truck, the individual had driven past a junior high school and nearly struck a child. Upon further investigation, the driver of the vehicle admitted to smoking "Wicked X," a product marketed as "herbal incense" and known to contain synthetic cannabinoids, prior to the accident. Preliminary toxicology reports indicated that the individual did not have any alcohol or other illegal substances in his system.

Detailed chemical analyses by DEA and other investigators have found these synthetic cannabinoids spiked on plant material in herbal incense products marketed to the general public. Product analyses have found variations in both the synthetic cannabinoid found on the plant material and the amount. As proposed in scientific literature, the risk of adverse health effects is further increased by the fact that similar products vary in the composition and concentration of synthetic cannabinoids spiked on the plant material.

Self-reported abuse of these THC-like synthetic cannabinoids either alone (e.g., in pills with the substance in powder form) or spiked on plant material appear extensively on Internet discussion boards, and abuse has been

reported to public health officials and law enforcement. The abuse of these substances spiked on plant material is corroborated by forensic laboratory analysis of products encountered by law enforcement.

According to the U.S. Customs and Border Protection, a number of the products and synthetic cannabinoids appear to originate from foreign sources. Product manufacturing operations encountered by law enforcement corroborate that the herbal incense products are manufactured in the absence of quality controls and devoid of regulatory oversight. Law enforcement has encountered the manufacture of herbal incense products occurring in such places as residential neighborhoods. These products and associated synthetic cannabinoids are readily accessible via the Internet.

Based on the above data, the continued uncontrolled manufacture, distribution, importation, exportation, and possession of JWH-018, JWH-073, JWH-200, CP-47,497, and cannabicyclohexanol pose an imminent hazard to the public safety. DEA is not aware of any recognized therapeutic uses of these synthetic cannabinoids in the United States.

DEA has considered the three criteria for placing a substance into Schedule I of the CSA (**21 U.S.C. 812**). The data available and reviewed for JWH-073, JWH-018, JWH-200, CP-47,497, and cannabicyclohexanol indicate that these synthetic cannabinoids each has a high potential for abuse, no currently accepted medical use in treatment in the United States and a lack of accepted safety for use under medical supervision.

In accordance with the provisions of section 201(h) of the CSA (**21 U.S.C. 811(h)**) and 28 CFR 0.100, the Administrator has considered the available data and the three factors required to support a determination to temporarily schedule five synthetic cannabinoids: 1- butyl-3-(1-naphthoyl)indole, 1-pentyl-3-(1-naphthoyl)indole, 1-[2-(4-morpholinyl)ethyl]-3-(1-naphthoyl)indole, 5-(1,1-dimethylheptyl)-2- [(1R,3S)-3-hydroxycyclohexyl]-phenol, and 5-(1,1-dimethyloctyl)-2- [(1R,3S)-3-hydroxycyclohexyl]-phenol in Schedule I of the CSA and finds that temporary placement of these synthetic cannabinoids into Schedule I of the CSA is necessary to avoid an imminent hazard to the public safety.

### **Regulatory Requirements**

With the issuance of this final order, JWH-018, JWH-073, JWH-200, CP-47,497, and cannabicyclohexanol become subject to the regulatory controls and administrative, civil and criminal sanctions applicable to the manufacture, distribution, possession, importation, and exportation of a Schedule I controlled substance under the CSA.

1. Registration. Any person who manufactures, distributes, dispenses, imports, exports, or possesses JWH-018, JWH-073, JWH-200, CP-47,497, or cannabicyclohexanol or who engages in research or conducts instructional activities with respect to JWH-018, JWH-073, JWH-200, CP-47,497, or cannabicyclohexanol, or who proposes to engage in such activities, must be registered to conduct such activities in accordance with **21 U.S.C. 823** and **958**. Any person who is currently engaged in any of the above activities and is not registered with DEA must submit an application for registration and may not continue their activities until DEA has approved that application. Retail sales of Schedule I controlled substances to the general public are not allowed under the Controlled Substances Act.
2. Security. JWH-018, JWH-073, JWH-200, CP-47,497, and cannabicyclohexanol are subject to Schedule I security requirements. Accordingly, appropriately registered DEA registrants must manufacture, distribute and store these substances in accordance with **1301.71**; **1301.72(a)**, (c), and (d); **1301.73**; **1301.74**; **1301.75(a)** and (c); and **1301.76** of Title 21 of the Code of Federal Regulations as of March 1, 2011.
3. Labeling and packaging. All labeling and packaging requirements for controlled substances set forth in **Part 1302** of Title 21 of the Code of Federal Regulations shall apply to commercial containers of JWH-018, JWH-073, JWH-200, CP-47,497, and cannabicyclohexanol. Current DEA registrants shall have thirty (30) calendar days from the effective date of this Final Order to be in compliance with all labeling and packaging requirements.
4. Quotas. Quotas for JWH-018, JWH-073, JWH-200, CP-47,497, and cannabicyclohexanol will be established based on registrations granted and quota applications received pursuant to **part 1303** of Title 21 of the Code of Federal Regulations.

5. Inventory. Every DEA registrant who possesses any quantity of JWH-018, JWH-073, JWH-200, CP-47,497, or cannabicyclohexanol is required to keep inventory of all stocks of these substances on hand pursuant to **1304.03**, **1304.04**, and **1304.11** of Title 21 of the Code of Federal Regulations. Every current DEA registrant who desires registration in Schedule I for JWH-018, JWH-073, JWH-200, CP-47,497, or cannabicyclohexanol shall conduct an inventory of all stocks of these substances. Current DEA registrants shall have thirty (30) calendar days from the effective date of this Final Order to be in compliance with all inventory requirements.
6. Records. All registrants who handle JWH-018, JWH-073, JWH-200, CP-47,497, or cannabicyclohexanol are required to keep records pursuant to **1304.03**, **1304.04**, **1304.21**, **1304.22**, and **1304.23** of Title 21 of the Code of Federal Regulations. Current DEA registrants shall have thirty (30) calendar days from the effective date of this Final Order to be in compliance with all recordkeeping requirements.
7. Reports. All registrants are required to submit reports in accordance with **1304.33** of Title 21 of the Code of Federal Regulations. Registrants who manufacture or distribute JWH-018, JWH-073, JWH-200, CP-47,497, or cannabicyclohexanol are required to comply with these reporting requirements and shall do so as of March 1, 2011.
8. Order Forms. All registrants involved in the distribution of JWH-018, JWH-073, JWH-200, CP-47,497, or cannabicyclohexanol must comply with order form requirements of **part 1305** of Title 21 of the Code of Federal Regulations as of March 1, 2011.
9. Importation and Exportation. All importation and exportation of JWH-018, JWH-073, JWH-200, CP-47,497, or cannabicyclohexanol must be conducted by appropriately registered DEA registrants in compliance with **part 1312** of Title 21 of the Code of Federal Regulations on or after March 1, 2011.
10. Criminal Liability. The manufacture, distribution, dispensation, or possession with the intent to conduct these activities; possession; importation; or exportation of JWH-018, JWH-073, JWH-200, CP-47,497, or cannabicyclohexanol not authorized by, or in violation of the CSA or the Controlled Substances Import and Export Act occurring as of March 1, 2011 is unlawful.

[Editor's Note: See the Federal Register for information regarding the Regulatory Requirements involving Executive Order 12988, Executive Order 13132, the Congressional Review Act, and the Unfunded Mandates Reform Act of 1995.]

### **List of Subjects in 21 CFR Part 1308**

Administrative practice and procedure, Drug traffic control, Reporting and recordkeeping requirements.

Under the authority vested in the Attorney General by section 201(h) of the CSA (**21 U.S.C. 811(h)**), the Administrator hereby amends 21 CFR part 1308 as follows:

### **PART 1308--SCHEDULES OF CONTROLLED SUBSTANCES**

1. The authority citation for part 1308 continues to read as follows:  
Authority: **21 U.S.C. 811, 812, 871(b)**, unless otherwise noted.
2. **Section 1308.11** is amended by adding new paragraphs (g)(1), (2), (3), (4), and (5) to read as follows:

#### **Sec. 1308.11 Schedule I.**

\* \* \* \* \*

(g) \* \* \*

- (1) 5-(1,1-Dimethylheptyl)-2-[(1R,3S)-3-hydroxycyclohexyl]-phenol, its optical, positional, and geometric isomers, salts and salts of isomers--7297 (Other names: CP-47,497)
- (2) 5-(1,1-Dimethyloctyl)-2-[(1R,3S)-3-hydroxycyclohexyl]-phenol, its optical, positional, and geometric isomers, salts and salts of isomers--7298 (Other names: cannabicyclohexanol and CP-47,497 C8 homologue)

- (3) 1-Butyl-3-(1-naphthoyl)indole, its optical, positional, and geometric isomers, salts and salts of isomers--7173 (Other names: JWH- 073)
- (4) 1-[2-(4-Morpholinyl)ethyl]-3-(1-naphthoyl)indole, its optical, positional, and geometric isomers, salts and salts of isomers--7200 (Other names: JWH-200)
- (5) 1-Pentyl-3-(1-naphthoyl)indole, its optical, positional, and geometric isomers, salts and salts of isomers--7118 (Other names: JWH- 018 and AM678)

Dated: February 18, 2011.

**Michele M. Leonhart,**  
Administrator.

[FR Doc. 2011-4428 Filed 2-28-11; 8:45 am]  
BILLING CODE 4410-09-P

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## SELECTED REFERENCES

[The Selected References section is a compilation of recent publications of presumed interest to forensic chemists. Unless otherwise stated, all listed citations are published in English. Abbreviated mailing address information duplicates that which is provided by the abstracting service. Patents and Proceedings are reported only by their *Chemical Abstracts* citation number. For full text copies of any of the articles listed, you may email the DEA Library at dea.library -at- usdoj.gov]

1. Dresen S, Ferreiros N, Puetz M, Westphal F, Zimmermann R, Auwaerter V. **Monitoring of herbal mixtures potentially containing synthetic cannabinoids as psychoactive compounds.** *Journal of Mass Spectrometry* 2010;45(10):1186-1194. [Editor's Notes: The results of the monitoring of commercially available "incense" products from June 2008 to September 2009 are presented. In this period of time, more than 140 samples of herbal mixtures were analyzed for bioactive ingredients and synthetic cannabimimetic substances in particular. The results show that the composition of many products changed repeatedly over time as a reaction to prohibition and prosecution. Therefore neither the reseller nor the consumer of these mixtures can predict the actual content of the "incense" products. As long as there is no possibility of generic definitions in the controlled substances legislation, new designer cannabinoids will appear on the market as soon as the next legal step has been taken. This has been affirmed by the recent identification of the aminoalkylindoles JWH-250 and JWH-398. The identification of the synthetic opioid O-desmethylnaloxone in a herbal mixture declared to contain "kratom" proves that the concept of selling apparently natural products spiked with potentially dangerous synthetic chemicals/pharmaceuticals is a continuing trend for the market of "legal highs." Contact: Institute of Forensic Medicine, Forensic Toxicology, University Medical Center Freiburg, Freiburg D-79104, Germany.]
2. Guan F, Uboh CE, Soma LR, You Y, Liu Y, Li X. **Correlation of product ion profiles with molecular structures of androgenic and anabolic steroids in ESI MS/MS.** *Journal of Mass Spectrometry* 2010;45(11):1261-1269. [Editor's Notes: Presents title study. Contact: School of Veterinary Medicine, University of Pennsylvania, Kennett Square, PA 19348, USA.]

### Additional References of Possible Interest:

1. Soederholm SL, Damm M, Kappe CO. **Microwave-assisted derivatization procedures for gas chromatography/mass spectrometry analysis.** *Molecular Diversity* 2010;14(4):869-888. [Editor's Notes: In this review, published applications of microwave-assisted derivatization procedures for GC/MS are summarized. Despite the many advantages of GC/MS, time-consuming derivatization steps are often required in order to obtain desirable chromatographic characteristics or to improve the stability and detectability of the target analytes. These derivatization processes typically require reaction times from 30 minutes up to several hours at elevated temperatures. In contrast, microwave protocols have been shown to reduce the time required for derivatization to a few minutes, and can thus very effectively shorten the overall analysis time, in particular when carried out in a high-throughput format. Herein, the literature in this field is summarized and recent experimental techniques for performing parallel GC/MS derivatization protocols are discussed. Contact: Christian Doppler Laboratory for Microwave Chemistry (CDLMC), Institute of Chemistry, Karl-Franzens-University Graz, Graz 8010, Austria.]
2. Singh N, Day P, Katta VR, Mohammed GP, Lough WJ. **LC purity and related substances screening for mephedrone.** *Journal of Pharmacy and Pharmacology* 2010;62(10):1209-1210. [Editor's Notes: Presents title study. Contact: Department of Pharmacy, Health and Well-Being, University of Sunderland, Sunderland, UK.]

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The Journal/Textbook Collection Exchange is a service intended to facilitate the transfer of unwanted journals and textbooks to forensic libraries or other *Microgram* subscribers. The current donations are listed below. The offers are First Come/First Serve (except libraries have preference). There are no charges to the requestor. Please provide a full mailing address in the request.

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*Arzneimittel Forschung* (Microfilm) 1973; Vol. 23 to 1999; Vol. 49  
*Forensic Science International* (Microfilm) 1972; Vol. 1 to 1976; Vol. 8  
*Forensic Science International* (Microfilm) 1983; Vol. 21 to 1996; Vol. 83  
*Journal of Chromatography* (Microfilm) 1958; Vol. 1 to 1993; Vol. 622  
*Journal of Chromatography A* (Microfilm) 1993; Vol. 652 to 2001; Vol. 921  
*Journal of Chromatography B* (Microfilm) 1994; Vol. 652 to 2004; Vol. 813  
*Journal of Forensic Sciences* (Microfilm) 1956; Vol. 1 to 1977; Vol. 22  
*Journal of Forensic Sciences* (Microfilm) 1985; Vol. 30 to 1996; Vol. 41  
*Journal of Pharmacy and Pharmacology* (Microfilm) 1965; Vol. 17 to 1987; Vol. 39  
*Science* (Microfilm) 1998; Vol. 279 to 2004; Vol. 306

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## THE DEA FY 2011 STATE AND LOCAL FORENSIC CHEMISTS SEMINAR SCHEDULE

The FY 2011 schedule for the State and Local Forensic Chemists Seminar is as follows:

June 6-10, 2011  
September 12-16, 2011

The school is open only to forensic chemists working for law enforcement agencies. It is intended for chemists who have completed their agency's internal training program and have also been working on the bench for at least one year. There is no tuition charge. The course is held at the Hyatt Place Dulles North Hotel in Sterling, Virginia (near the Washington/Dulles International Airport). A copy of the application form is reproduced on the last page of this issue of *Microgram Bulletin*. Completed applications should be mailed to the Special Testing and Research Laboratory (Attention: J. Head) at 22624 Dulles Summit Court, Dulles, VA 20166. For additional information, call (703) 668-3349.

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### SCIENTIFIC MEETINGS

**Title:** 2011 Mid-Atlantic Association of Forensic Scientists Annual Meeting

**Sponsoring Organization:** Mid-Atlantic Association of Forensic Scientists

**Inclusive Dates:** May 23-27, 2011

**Location:** Founder's Inn and Spa (Virginia Beach, VA)

**Contact Information:** [maafsmtg@gmail.com](mailto:maafsmtg@gmail.com)

**Website:** [www.maafs.org](http://www.maafs.org)

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<b>DEA State and Local Forensic Chemist Seminar Application</b>			
Name: (PRINT NAME EXACTLY AS IT IS TO APPEAR ON CERTIFICATE)		Title:	
Employer:			
Your Office Mailing Address (include city, state, and zip code):			Length of Service:
Business Telephone: (     )     -	Business Fax: (     )     -	Date of Application:	
Email Address:			
Education			
College or University	Degree	Major	
Please Check Which Techniques or Equipment Are Used in Your Laboratory			
<input type="checkbox"/>	Color Tests	<input type="checkbox"/>	UV
<input type="checkbox"/>	Column Chromatography	<input type="checkbox"/>	IR
<input type="checkbox"/>	Microcrystal Tests	<input type="checkbox"/>	CE
<input type="checkbox"/>	Thin Layer Chromatography	<input type="checkbox"/>	GC/MS
<input type="checkbox"/>	GC	<input type="checkbox"/>	Other (please specify)
<input type="checkbox"/>	HPLC	<input type="checkbox"/>	Other (please specify)
Indicate Analytical Problem(s) Nominee Would Like to Have Covered:			
Choice of Seminar Dates:			
1st Choice:		2nd Choice:	
Laboratory Chief/Director:			
Printed Name: _____		Signature: _____	
Title: _____		Date: _____	
Phone: _____			